

Customer No.: 31561
Docket No.: 13838-US-PA
Application No.: 10/711,679

AMENDMENTS

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

Claim 1 (currently amended) A white LED device, comprising:

- a first LED die, capable of emitting a first color light, the first LED die having a first electrode and a second electrode;
- a second LED die, capable of emitting a second color light, the first LED die having a first electrode and a second electrode; and
- a phosphor layer disposed on at least one of the first and second LED dies, capable of emitting a third color light when stimulated by the first or second color light;
- an electrode connection structure, electrically connected with electrodes of the first and second LED dies for providing electricity to the first and second LED dies, wherein the first electrode of the first LED die and the first electrode of the second LED die are electrically connected through a first electrode frame, and the second electrode of the first LED die and the second electrode of the second LED die are electrically connected through a second electrode frame; and

Customer No.: 31561
Docket No.: 13838-LJS-PA
Application No.: 10/711,679

a light mixing structure, capable of mixing the first to third color lights to produce white light.

Claim 2 (original) The white LED device according to claim 1, wherein the light mixing structure comprises a transparent packaging layer enclosing the first LED die, the second LED die and the phosphor layer; and the first to third color lights are mixed through a lens effect of the transparent packaging layer.

Claim 3 (original) The white LED device according to claim 2, wherein the electrode connection structure includes a packaging substrate that have pins electrically connected with the electrodes of the first and second LED dies.

Claim 4 (currently amended) The white LED device according to claim 3, wherein the packaging substrate has a groove therein; the first and second LED dies are disposed in the groove; the transparent packaging layer fills the groove; and the pins comprise:

Customer No.: 31561
Docket No.: 13838-US-PA
Application No.: 10/711,679

a first pin extending into the groove, the first pin having an end electrically connected with the first electrode of the first LED die and the first electrode of the second LED die; and

a second pin, having an end electrically connected with the second electrode of the first LED die and the second electrode of the second LED die through wire bonding.

Claim 5 (original) The white LED device according to claim 4, wherein the transparent packaging layer comprises:

a transparent resin filled in the groove; and
a transparent glass layer disposed on the transparent resin.

Claim 6 (Canceled) The white LED device according to claim 2, wherein the electrode connection structure comprises:

a first electrode frame, connected with one electrode of each of the first and second LED dies; and

a second electrode frame, connected with the other electrode of each of the first and second LED dies.

Claim 6 (currently amended) The white LED device of claim 1, wherein the first electrode frame has a groove therein;

Customer No.: 31561
Docket No.: 13838-US-PA
Application No.: 10/711,679

the first and second LED dies are disposed in the groove, so that one electrode of each of the first and second LED dies is electrically connected to the first electrode frame; the transparent packaging layer fills the groove; and the second electrode frame connect with the other electrode of each of the first and second LED dies through wire bonding.

Claim 7 (currently amended) The white LED device according to claim 6, wherein the transparent packaging layer comprises:

a transparent resin filled in the groove; and
a transparent glass layer enclosing the transparent resin.

Claim 8 (currently amended) The white LED device according to claim 1, wherein the first LED die comprises a blue LED die, the second LED die comprises a green LED die, and the phosphor layer comprises a red phosphor.

Claim 9 (currently amended) The white LED device according to claim 8, wherein the phosphor layer is disposed merely on the blue LED die.

Claim 10 (currently amended) The white LED device according to claim 8, wherein the phosphor layer is disposed merely on the green LED die.

Customer No.: 31561
Docket No.: 13838-US-PA
Application No.: 10/711,679

Claim 11 (currently amended) The white LED device according to claim 8, wherein the phosphor layer is disposed on each of the blue LED die and the green LED die.

Claim 12 (currently amended) The white LED device according to claim 8, wherein the phosphor layer includes a red phosphor selected from the group consisting of $\text{Sr}_2\text{Si}_5\text{N}_8:\text{Eu}^{2+}$, $\text{SrS}:\text{Eu}^{2+}$, $\text{CaS}:\text{Eu}^{2+}$ and combinations thereof.